Module Name	Description	In Scope	Out of Scope	Required Modules
Associative Dimension	This module provides mechanisms for the association of elements for which a dimension is calculated with the presentation of this dimension and the dimension value.	- the structures for representing associations between dimensions or drughting callouts and their respective target product shape geometry or annotation.	- the association between computer-reognizable limit dimensions and shape geometry or annotation - the association between geometric tolerances and related geometric elements	- Annotation elements - Draughting annotation
Annotation Elements	This module contains application objects used for the creation of annotation without a specific meaning in the context of a drawing. It also includes application objects related to annotation appearance.	- the presentation of non-shape product data depicted by two-dimensional or planar three-dimensional annotation; - the structures for representing the presentation characteristics of annotation; - the structures for representing subfigures and symbols; - the structures for representing externally defined symbols and presentation characteristics; - pre-defined symbols and presentation characteristics.	- annotation that presents a dimension or draughting callout.	- Colour - Curve appearance
Draughting Annotation	This module contains application objects used for the creation of annotation that has a specific meaning within the scope of draughting.	- the structures for representing single or composite dimensions; - the structures for representing structured or unstructured dimensions; the structures for representing draughting callouts that may be directed by means of leaders, projection curves, or dimension curves.	- annotation that is not used in the presentation a dimension or draughting callout.	- Annotation elements

Draughting shape model	This module contains the application objects which allow for the association of annotation elements with shape models. It also provides mechanisms for structuring such associations in terms of sub-models.	- the structures for representing the product shape and planar annotation defined within the same coordinate space; - the structures for identifying shape models that are constituents of another draughting shape model	- any specifics on classes of draughting shape models used to represent product shape - support for non-planar annotation defined within the same coordinate space as a shape model - the presentation of the draughting shape model - the association between elements of the shape model with annotation defined within the same coordinate space	- Annotation elements
Drawing structure	This module contains information on the hierarchical organization of drawings	- the structures for representing a drawing that depicts any phase of design; - the structures for representing individual drawing revisions; - the hierarchical structure of drawings, drawing sheets, and views of the draughting shape model; - the exchange of drawing history;	- the administrative data used for the purpose of drawing management; - the administrative data identifying the product versions being documented by the drawing. - the structures for representing drawings that are not related to a product; - the exchange of data used exclusively for the creation of paper or hard copy versions of the drawing;	- Annotation elements - Product identification
Model viewing	This module represents the information necessary to map a draughting shape model onto a view.	- the specification of the orientation and scale associated with a view - the structures for association of elements to be presented	- definition of the area on a drawing for model projection	Appearance assignment
Colour	It provides mechanisms for the specification of predefined, user defined and externally	The definition of RGB colour as well as reference to externally	All things which are not involved in the complete	None

	defined colours.	defined colours and predefined colours.	specification of colour.	
Surface appearance wireframe	This module represents information for the wireframe-like presentation of surfaces	- the assignment of visual attributes to curves belonging to surfaces; - the selection of specific curve types for wireframe-like presentation of surfaces.	- realistic presentation of surfaces - scientific visualization	- Curve appearance
Surface appearance rendering	This module represents information for the realistic presentation of surfaces	- the assignment of visual attributes to surfaces enabling realistic presentation	-wireframe-like presentation of surfaces - scientific visualization	- Colours - Annotation Elements
Curve appearance	This module specifies the application module for associating curves with appearance characteristics.	The association of appearance information to point, curves and vectors.	All things which are not involved in the complete specification of curve appearance.	-Colour -Annotation Elements
Appearance assignment	This module provides the mechanism for the assignment of visual attributes to shape models, geometric elements and annotation	- the association of visual attributes with shape models, geometric elements and annotation	- the definition of views on which shape models, geometric elements or annotation are presented	- draughting shape model - curve appearance - surface appearance wireframe - surface appearance rendering

Module Catalogue entries for proposed PDM schema modules

Name	Description	In Scope	Out of Scope	Required Modules
Authorization	This module contains the constructs to represent basic information resulting from the release and approval processes. This includes application objects necessary to indicate the acceptance, on a specific date, at a particular level of status, by a group of people having roles that allow them to grant the authorization.	Data necessary to track the approval of a design, a configuration control aspect (e.g. a version) of a product, work requests, and work directives.	Business data for the management of workflow related to the approval process.	Date, Date Time, Organization, Person Organization, Product Identification.
PDM Authorization Assignment	This module provides the capability to associate an authorization with product data.	Authorization of product versions, the relationship between these versions, and different views of these versions relevant for a particular life cycle stage and application domain. Authorization of work requests and work directives.	Authorization of products independent of version. Authorization of projects, contracts, or security classifications.	Authorization, Product Identification, Product Change Management.
Date	This module supports the specification of a calendar date.	Calendar Dates.	Ordinal Dates or date formats other than a calendar date.	
PDM Date Assignment	This module provides the capability to associate a date with product data.	Association of a date to products, to the assignment of Organizations (with optional person) to product data, and to work requests and work directives.		Date, PDM Organization Assignment, PDM Person Organization Assignment, Product Identification, Product Change Management.

Name	Description	In Scope	Out of Scope	Required Modules
Date Time	This module supports the specification of a date and an associated time of day.	Calendar Dates. Local time specification together with a universal time offset from GMT.	Ordinal Dates or date formats other than a calendar date. Specification of a time independent of a date.	Date.
PDM Date Time Assignment	This module provides the capability to associate a date time with product data.	Association of a date with an associated time specification to products, to the assignment of Organizations (with optional person) to product data, and to work requests and work directives.	Association of a time independent of a date to product data.	Date Time, PDM Organization Assignment, PDM Person Organization Assignment, Product Identification, Product Change Management.
Organization	This module supports the identification of an organization.	Organizational entities that are formally recognized, such as companies or countries.	Ad hoc organizations, such as project teams, meetings, or informal groups.	
PDM Organization Assignment	This module provides the capability to associate an organization with product data.	Association of an organization to products, to files, to the assignment of alias identification to product data, to contracts, and to work requests and work directives.		Organization, Product Identification, Product Change Management, Contract, PDM Alias Assignment, Document Management.
Person Organization	This module supports the identification of an organization and a person in a specified role within that organization.	Identification of an individual human being.	Identification of a person independent of an organization. Identification of fictitious person or character.	Organization
PDM Person Organization Assignment	This module provides the capability to associate an organization and a person in a specified role within that	Association of an organization with a specified person to products, to files, and		Person Organization, Product Identification, Product Change Management, Document

Name	Description	In Scope	Out of Scope	Required Modules
	organization to product data.	work requests and work directives.		Management.
Project Identification	This module supports the identification of an organizational project, having a time limit, a defined goal, budget, and resources.		A project not related to any organization.	Organization.
PDM Project Assignment	This module provides the capability to associate a project with product data.	The association of a project with dates (and optional times) representing actual and planned start and end dates. The association of a project with a product concept.	Association of a project directly to product identification.	Project Identification, Date, Date Time, End Item Identification.
Security Classification	This module supports the identification of the level of confidentiality that is required in order to protect product data against unauthorized usage.	Identification of the security classification of a product, a part as a component in an assembly, or a file.	Identification of a security classification without a specified security level.	
PDM Security Classification Assignment	This module provides the capability to associate a security classification with product data.	Association of security classification with product versions, views on product versions, the use of a component in an assembly, or a file.	Association of security classification to organizations or projects.	Product Identification, Product Structure, Document Management
Certification	This module supports the identification of a level of endorsement that is recognized and documented by some certification body.	Certification of a supplied part relationship.		
PDM Certification Assignment	This module provides the capability to assign a certification to a supplied part		Certification of relationships between products that do not represent a supplied part	Certification, Product Structure

Name	Description	In Scope	Out of Scope	Required Modules
	relationship.		relationship.	
Contract	This module supports the identification of a binding agreement concerning the design of products.			
PDM Contract Assignment	This module provides the capability to associate a contract to product data.			Contract, Product Identification
Document Management	This module provides the capability to identify and configuration control documents and files.	Identification of a logical document, a version of the logical document, a (possibly multiple alternative) representation of a version, and a (possibly multiple) files, either digital or paper.		Product Identification
Document Properties	This module provides the capability to identify specific properties of a particular document representation or a particular file.	Properties related to the document content, format, creation, source, and file_size.		Document Management, Measures and Units
PDM Document Assignment	This module provides the capability to associate a document with product data.	Association of a document, version, or file to a product definition, a relationship between product versions or definitions, or a specified aspect (feature) of a product.		Document Management, Product Identification, Product Structure, Product Properties.
End Item Identification	This module contains information about the different products that are sold by an organization to it's customers.			

Name	Description	In Scope	Out of Scope	Required Modules
Configuration Effectivity	This module contains information about the planned usage of components in a product structure model.			End Item Identification, Product Identification, Date Time.
Dated Effectivity Period	This module contains constructs for the identification of the valid use of an aspect of product data tracked by date.	Dated effectivity period within the context of a specified organization.	Identification of the valid use of an aspect of product data tracked by lot or by a serial number sequence. Dated effectivity period not in the context of a specified organization.	Organization, Date Time.
PDM Dated Effectivity Period Assignment	This module provides the capability to associate a dated effectivity period with product data.			Dated Effectivity Period, Product Identification, Document Management, Security Classification.
Alias Identification	This module supports the association of an object with an additional identifier that is used to identify the object of interest in a different context, either in another Organization , or in some other context.	Alias identification of a product definition, an approval status, a file, an organization, security classification level.	Alias identification of people, dates, and projects.	Product Identification, Organization
PDM Alias Identification Assignment	This module provides the capability to associate an alias identification with product data.			Alias Identification, Product Identification, Approval, Document Management, Organization, Security Classification.
Version Identification	This module supports the association of a version identifier.	Association of a version identifier with a file, either digital or hardcopy.	Association of a version identifier to product identification. Association of a version identifier to a logical document, a document version,	

Name	Description	In Scope	Out of Scope	Required Modules
			or a document representation.	
PDM Version Identification Assignment	This module provides the capability to associate a version identification with product data.			Version Identification, Document Management
Product Identification	This module provides the constructs to identify products.	Identification of a product, a product version, and a product definition. Identification of the specific classification of products representing product type.	General classification of products according to some identified classification system.	
Product Properties	This module provides the capability to associate specific properties with product data.	Product cost, weight , and mass.		Product Identification, Measures and Units
Product Structure	This module supports the specification of assembly structure relationships between product.	Next assembly relationships and make from relationships.		Product Identification
External Representations	This module provides the constructs necessary to represent an externally defined shape representation.	Externally defined shape representations containing explicit information about the transformation and orientation required for Digital Mock Up application.	Externally defined shape representations containing explicit geometry.	Product Identification, Measures and Units
Product Change Management	This module contains the constructs required to represent information related to product release and change data.	Work request and work order documentation. Data that is used in, or results from, the analysis or test of a design which is used as evidence for consideration of a	Data that is used in, or results from, the analysis or test of a design that is not used as evidence for consideration of a change to a design.	Product Identification.

Name	Description	In Scope	Out of Scope	Required Modules
		change to a design.		
Measures and Units	This module contains the constructs required to represent measures and their associated units.	Part 41 defined measures and units.	Measures and units not defined in Part 41.	

Questions/Issues

1. In a management resources type module, where there is basically an assignment of something (e.g. certification) to a variety of things, are the modules containing *all* of the other things required modules? - maybe not since a vendor may choose to implement approval, for example, as it applies to the set of modules he/she has already implemented - this set may be a subset of all the things that approvals may be applied to - isn't it ok to apply approval to a subset of the" required" modules? Are these really required in this case? This is different from, say product classification, where it makes no sense without a required product identification module (which in this case is truly required)?